

COST-EFFECTIVENESS OF CETUXIMAB COMBINED WITH RADIOTHERAPY FOR PATIENTS WITH LOCALLY ADVANCED HEAD AND NECK CANCER IN TAIWANChan AL¹, Leung HW², Lin SJ³¹Chi Mei Medical Center, Tainan, Taiwan, ²Taipei Medical University-Shuang Ho Hospital, Jhonghe City, Taiwan, ³Kaohsiung Medical University, Kaohsiung, Taiwan

OBJECTIVES: The aim of this study was conducted to estimate the cost-effectiveness of cetuximab combined with radiotherapy compared to radiotherapy alone in patients with locally advanced squamous cell carcinoma of head and neck. **METHODS:** A decision-tree analysis was used to compare cetuximab combined with radiotherapy and radiotherapy alone in the treatment of patients with locally advanced squamous cell carcinoma of head and neck from the perspective of the Bureau of National Health Insurance (BNHI) in Taiwan. The model was based on individual patient data extracted from an international phase III trial. The direct medical costs of care were based on the reimbursement of Bureau of National Health Insurance in Taiwan. One-way sensitivity analyses were performed with varying the costs and clinical parameters. **RESULTS:** The incremental cost per quality-adjusted life-year for patients receiving radiotherapy in combination with cetuximab compared to radiotherapy alone was in the range of \$70,469/yr to \$542,334/yr in the base-case analysis. Sensitivity analysis showed the robust results. **CONCLUSIONS:** This study demonstrated the addition of cetuximab to high-dose radiotherapy regimen is likely to be cost-effective in consideration of higher locoregional control rate to be achieved compared to radiotherapy alone for locally advanced head and neck cancer in Taiwan.

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THE POTENTIAL IMPACT OF USING CHANGES IN SERUM HER2 LEVELS TO INITIATE THERAPY CHANGE IN HER2+ METASTATIC BREAST CANCERNoy K¹, Dejori M¹, Ghosh P², Suhail AM³, Leitzel K⁴, Lipton A⁴, Carney W⁵, Wittenberg G¹¹Siemens Corporate Research, Princeton, NJ, USA, ²University of Erlangen-Nuremberg, Erlangen, Germany, ³VA Medical Center, Lebanon, PA, USA, ⁴Pennsylvania State University College of Medicine, Hershey, PA, USA, ⁵Siemens Healthcare Diagnostics, Cambridge, MD, USA

OBJECTIVES: The goal of personalized medicine is to identify the right treatment for the right patient at the right time. Prior to treating metastatic breast cancer (MBC) patients with Herceptin, tumors are tested for overexpression of HER2. Still for many HER2+ patients (treated with herceptin), disease progression continues. It has previously been shown that for MBC changes in patients' serum HER-2 levels during treatment is predictive of their eventual response to therapy. Through modeling and simulation we examine the potential impact of ceasing Herceptin therapy prior to the end of the planned treatment cycle for patients whose serum HER-2 levels predict an eventual lack of therapeutic response. **METHODS:** Markov Cycle Tree models were constructed to simulate disease progression and therapy for MBC patients using our custom simulation software, ProFound. The progression of disease was dependent on the patient's current therapy: Herceptin, Tykerb, or Paclitaxel, and model parameters were based on meta-analysis of clinical trials. Patients are stratified into three sets: Serum HER-2 Increasing (>20%), Not Changing, and Decreasing (>20%). We compared the following alternative treatment strategies: Paclitaxel, Herceptin, and initial Herceptin with change in therapy after 1 month based on changes in serum HER2. Patients removed from Herceptin either simply discontinued therapy or were switched to Tykerb. **RESULTS:** Compared with continued treatment with Herceptin, moving patients with >20% increase in Serum HER-2 to Tykerb resulted in an additional one life-month gained. All other strategies performed worse than continued Herceptin therapy, including moving patients whose Serum HER2 levels are not decreasing to Tykerb. This highlights the importance of identifying the right subset of patients who will benefit from a change in therapy. **CONCLUSIONS:** A biomarker that can predict therapy failure prior to the end of treatment as part of the treatment decision-making process may extend the lives of patients.

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COST-EFFECTIVENESS OF LENOGRASTIM NEUTROPENIA DURATION IN ADULTS RECEIVING CHEMOTHERAPY FOR LEUKEMIARutkowski J¹, Derylo L¹, Fedyna M¹, Plisko R¹, Lis J², Wladyskiuk M¹¹HTA Consulting, Krakow, Poland, ²Sanofi-Aventis Sp. z o.o., Warsaw, Poland

OBJECTIVES: The aim of present analysis was to assess cost-effectiveness of lenograstim in comparison with other G-CSFs—filgrastim and pegfilgrastim in Polish settings (threshold is about 100,095 PLN). **METHODS:** Analysis covered time horizon of one chemotherapy cycle. A public payer perspective was adopted for cost analysis. The costs included were based on Polish NHF reference costs list. Data on time to ANC recovery, number of days with fever, length of hospital stay and antibiotics use were obtained from randomized controlled trials (RCTs) identified in the conducted systematic review. These included trials on prophylactic G-CSF use as well as trials in which only patients with neutropenia were included. Equations describing costs and QALY according to neutropenia and fever length, hospital stay and antibiotic use were established. **RESULTS:** Estimated QALY difference between lenograstim and filgrastim is 0.0041 (CI_{95%}[0.0007; 0.0079]), compared to pegfilgrastim is 0.0039 (CI_{95%}[0.0004; 0.0077]). Total costs difference between lenograstim and filgrastim is -2,069 PLN (CI_{95%}[-5,385; -1,039]) and compared to pegfilgrastim is 266 PLN (CI_{95%}[-3,233; 3,633]). The ICER in comparison with pegfilgrastim is 68,424 PLN. Probability of lenograstim being cost-effective over filgrastim is 91.54% and over

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pegfilgrastim is 51.41%. Taking into account only trials where G-CSFs were used in neutropenia prophylaxis estimated QALY difference between lenograstim and filgrastim is 0.0049 (CI_{95%}[0.0013; 0.0088]), compared to pegfilgrastim is 0.0047 (CI_{95%}[0.0011; 0.0086]). Total costs difference between lenograstim and filgrastim is -2,724 PLN (CI_{95%}[-6,139; -475]) and compared to pegfilgrastim is -434 PLN (CI_{95%}[-4,025; 2,996]). Probability of lenograstim being cost-effective over filgrastim is 96.12% and over pegfilgrastim is 66.82%. **CONCLUSIONS:** Lenograstim is dominant over filgrastim and cost-effective in comparison with pegfilgrastim. Acknowledgements: This analysis was supported by Sanofi-Aventis.

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COST EFFECTIVENESS ANALYSIS OF A CLINICAL PATHWAY FOR THE SURVEILLANCE OF HEPATOCARCINOMA IN COLOMBIA

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OBJECTIVES: The objective of this paper is an analysis of cost effectiveness of a proposed clinical pathway for the surveillance of hepatocellular carcinoma in Colombia compared to conventional management **METHODS:** Economic evaluation is performed by designing a Markov model to simulate two cohorts, one under a surveillance program through the combined use of alpha-fetoprotein and ultrasound every 6 months and another with the current monitoring scheme with a time horizon of 30 years and age of onset of 30 years, a rate adjustment of 3% the initial cohort of 100 patients **RESULTS:** The cost in the surveillance group is US \$ 1,495,548 and unguarded arm is U.S. \$ 798,714. With the surveillance program presents 21 deaths caused by the disease compared with 35 deaths without monitoring program, with 688 years of life gained and an ICER of US\$ 670. As demonstrated in other studies, the performing monitoring for HCC reduces mortality in the population at risk. The clinical pathway implementation of surveillance for HCC in people with liver cirrhosis and HBV and HCV infection is very cost effective compared with doing nothing from the perspective of third-party payer in Colombia. The results maintain the cost-effectiveness in the sensitivity analysis without major changes. **CONCLUSIONS:** The implementation of a monitoring method with alpha-fetoprotein and ultrasound every two years is cost effective. We recommend the implementation of clinical pathway assessed for its cost effectiveness in the light of life years gained as outcome.

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BORTEZOMIB IS COST-EFFECTIVE FOR FIRST-LINE TREATMENT OF MULTIPLE MYELOMA IN SWEDENRickert JB¹, Hornberger J², Liwing J³, Aschan J³, Gjønnes L⁴, Dhawan R⁵¹Cedar Associates LLC, Menlo Park, CA, USA, ²Cedar Associates LLC and Stanford University, Menlo Park, CA, USA, ³Janssen-Cilag AB, Sollentuna, Sweden, ⁴Janssen-Cilag AS, Lysaker, Norway, ⁵Johnson & Johnson Pharmaceutical Services LLC, Raritan, NJ, USA

OBJECTIVES: To estimate the incremental cost-effectiveness of bortezomib plus melphalan and prednisone (VMP) compared with melphalan, prednisone and thalidomide (MPT) and melphalan plus prednisone (MP) for the treatment of first-line multiple myeloma in Sweden. **METHODS:** We constructed a decision-theoretic model, using Microsoft® Excel 2007 to compare the VMP, MP and MPT regimens. Treatment effects of VMP and MP on progression-free survival and overall survival (OS) were obtained from the VISTA trial. Effects of MPT vs. MP were obtained from published reports of five randomized trials. Costs include drug and administration costs, adverse events, treatment of relapses, and end-of-life costs. Utility estimates are derived from the literature. A mixed treatment comparison meta-analysis indirectly compares VMP vs. MPT. The analytic framework is based on 'partitioned survival analysis' that allows survival data to be decomposed into three states: 1) alive before disease progression; 2) alive after progression; and 3) dead. The model estimates mean OS, quality-adjusted life-years (QALYs), costs and cost per QALY over a 30-year time horizon, and performs both 1-way and probabilistic sensitivity analyses. **RESULTS:** VMP's mean OS is 61 months compared to 42.7 and 50.2 months for MP and MPT, respectively. Mean lifetime direct medical costs per patient are approximately SEK 1,193,000, 604,000 and 920,000 for VMP, MP and MPT, respectively. Mean incremental cost per QALY of VMP compared to MP is SEK 676,415; 90 percent C.I. (335,578, 710,135) and SEK 576,823; 90 percent C.I. (0, 1,444,278) compared to MPT. The two most influential variables in our model are 1) VMP to MP hazard ratio; and 2) utility after progression. **CONCLUSIONS:** VMP and MPT are projected to prolong survival relative to MP. Having ICERs less than SEK 700,000, we believe that from a Swedish perspective, VMP is cost-effective compared to both MP and MPT.

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VALIDATION OF HEALTH OUTCOMES RESEARCH OF CANCER

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OBJECTIVES: Validation of health outcomes research of cancer becomes critical for the quality assessment of outcomes research. In Principles of Good Practice for Decision Analytic Modeling published by ISPOR Task Force ISPOR Task Force in 2003, validation was suggested: internal validation, between-model validation, and external & predictive validation. Also, Health Technology Assessment NHS R&D HTA Programme published Review of guidelines for good practice in decision-analytic modelling in health technology assessment in 2004, suggesting a checklist of Dimension of quality: Structure, Data, and Consistency (internal and external). The objective of this research is to review and summarize validation activities in cancer outcomes researches published between 1998 and 2009. Secondary objective is to identify any changes in validation activities post regulatory guidelines. **METHODS:** The relevant articles are